

Serial No.: 09/096,593  
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a' *sub B*  
correl.  
ii) a binding ligand covalently attached to said electrode via [conductive oligomer] a spacer; and

b) a voltage source electrically connected to said test chamber.

19. (Amended) An apparatus according to claim 18 or 20 further comprising a processor.

Please add the following claims:

*sub B*  
a2  
--20. An apparatus for the detection of a non-nucleic acid target analyte in a test sample, comprising:

a) a test chamber comprising an array of first measuring electrodes each comprising:

i) a self-assembled monolayer; and

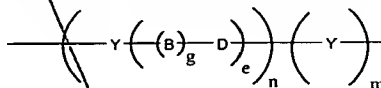
ii) a binding ligand covalently attached to said electrode via a spacer;

wherein said test chamber further comprises at least one second measuring electrode; and

b) a voltage source electrically connected to said test chamber.

21. An apparatus according to claim 18 or 20 wherein said spacer is a conductive oligomer.

22. An apparatus according to claim 21 wherein said conductive oligomer has the formula:



wherein

Y is an aromatic group;

n is an integer from 1 to 50;

g is either 1 or zero;

e is an integer from zero to 10; and

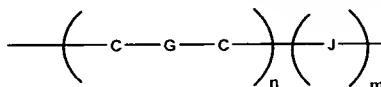
m is zero or 1;

wherein when g is 1, B-D is a conjugated bond; and

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wherein when g is zero, e is 1 and D is preferably carbonyl, or a heteroatom moiety, wherein the heteroatom is selected from oxygen, sulfur, nitrogen, silicon or phosphorus.

23. An apparatus according to claim 21 wherein said conductive oligomer has the formula:



wherein

n is an integer from 1 to 50;

m is 0 or 1;

C is carbon;

J is carbonyl or a heteroatom moiety, wherein the heteroatom is selected from the group consisting of oxygen, nitrogen, silicon, phosphorus, sulfur; and

G is a bond selected from alkane, alkene or acetylene, wherein if m = 0, at least one G is not alkane.

24. An apparatus according to claim 18 or 20 wherein said spacer is an insulator.

25. An apparatus according to claim 18 or 20 wherein said self-assembled monolayer comprises insulators.

26. An apparatus according to claim 18 or 20 wherein said self-assembled monolayer comprises conductive oligomers.

27. An apparatus according to claim 18 or 20 wherein said self-assembled monolayer comprises insulators and conductive oligomers.

28. An apparatus according to claim 18 or 20 wherein said binding ligand is a protein.--